

Data and Electronic Records Transfer Standards

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Data and Electronic Records Transfer to the State Archives of North Carolina

The State Archives of North Carolina houses records, papers, photographs, and other materials of enduring value that document citizen rights, government actions, interactions with the citizenry, and reflect change over time. As society shifts from paper-based to an electronic or digital world, the State Archives of North Carolina will continue to be the custodian of permanent archival records and materials, regardless of physical form or characteristics.¹ General Statute §121 designates the Department of Cultural Resources as the “archival and historical agency of the State of North Carolina” and further defines the powers and duties of the agency.² In this role, the State Archives receive records and materials of enduring value from state agencies, local government, and private individuals and entities. In the world of electronic records, it is imperative to ensure that these records and collections transfer in a method that maintains the authenticity of the original files.

Electronic files, by nature, are fragile and subject to alteration—either through human action or through corruption of data known as “bit rot.” The State Archives endeavors to receive electronic records and digital files that are complete and unaltered. In order to accomplish this, the State Archives utilizes a verification tool that scans the records and files in situ and transfers them to an external device utilizing standard, archivally sound verification protocols. These protocols can be invoked each time the records/files are moved and can be used for future auditing.

The State Archives takes responsibility for the devices and tools used to transfer and authenticate the electronic files and is committed to working with state and local government offices and private donors during the transfer process. In this way, the State Archives can certify the records and files in its repository as true, unchanged, and authentic. If a government agency or private donor elects to transfer files without using the prescribed tools, the State Archives will be unable to certify that the records did not change in the transfer period before being accepted into the digital repository and therefore, will not be able to certify their authenticity. The State Archives reserves the right to require the use of data transfer and verification tools in the case of records that:

- Affect multiple people, without regard to relation
- Have significance over a long span of time
- Document governance
- Document citizenship
- Are available for routine public inspection

Please refer to the guidance document, “Public Records Requiring Human-Readable Preservation Duplicates”³ for more information.

¹ North Carolina General Assembly, “General Statutes, G.S. 132.” Last modified 1995. Accessed September 25, 2012. <http://www.ncleg.net/gascripts/statutes/statutelookup.pl?statute=132>.

² North Carolina General Assembly, “General Statutes, G.S. 121.” Last modified 2008. Accessed September 25, 2012. <http://www.ncleg.net/gascripts/statutes/statutelookup.pl?statute=121>.

³ Government Records Branch, State Archives of North Carolina, “Public Records Requiring Human-Readable Preservation Duplicates.” Last modified May 2005. Accessed November 27, 2012.

Transfer Procedures for Digital Materials and Electronic Records using the Bagger

The State Archives of North Carolina utilizes Bagger, a data transfer tool developed by the Library of Congress. The Bagger tool essentially creates a package of files, or a “bag,” that contains a directory of the files for transfer and text files containing information used to verify the integrity of the data. The sender or depositor will use the tool to “bag” the files and

- place them on an external drive (provided by the State Archives), or
- make them available via a network connection for download or transfer.

The “data” folder along with the “manifest” and “info” files serve as the complete “bag.” Once the information is transferred, the State Archives will re-run the Bagger program, which compares the files to their original manifests, validating that none have changed in the transfer process. This way, the archives can prove that it has received the files as they were, bit for bit, on the file system from which they were transferred.

For Special Collections acquisitions, it is not always feasible to have files bagged on arrival. In such a case, the State Archives reserves the right to use the Bagger tool once in possession of the files. This will begin the authenticity chain once files transfer into the digital repository.

The Bagger software is open-source, well documented, and easy to use. Once transferred using Bagger, the tool can be invoked each time the records/files move and can be used for future auditing. Bagger is built on top of an earlier, command-line tool, BagIt, created for the same purpose—Bagger is essentially a more user-friendly version of BagIt. The data sender or depositor creating bags may use either BagIt or Bagger to perform the actions described above. Senders/depositors may choose to use BagIt instead of Bagger in certain types of workflows—such as automation or batch processing.

The State Archives will update this document should it elect to use a different tool for data transfer.